

THE GENTLEMEN AND LADIES STEM ACADEMY
STATEMENT

As of 2019, Shelby School District ranks 134th out of 140 districts in Tennessee.¹ The student population in Shelby County is comprised of over 70% minority students, a group historically underrepresented in STEM education. The Gentlemen and Ladies STEM Academy (GLA-STEM) is positioned to shift the trajectory upwards and improve overall student academic performance and close achievement gaps for all students, specifically minority students. Through its transformative academic curriculum infused with STEM, students are involved in problem solving, inquiry, and exploratory collaboration with their peers in project based learning that connects Science, Technology, Engineering, and Math with all other subjects. Taking fresh, innovative approaches to educating children, especially those who experience barriers to traditional learning, is GLA-STEM's model for an inclusive high performing learning atmosphere, which is in the best interest of students, community, and Shelby County School district. The local district's decision to deny GLA-STEM's charter application is contrary to local and national need for STEM education of minorities.

The demand for STEM degrees is ever increasing and GLA-STEM seeks to provide an early start in preparing children today for future careers that require a STEM discipline. "STEM occupations continue to seriously lack minority representation, and therefore STEM programs are needed more than ever in schools that serve minority and low-income populations."² With a STEM enhanced academic curriculum utilizing tactile teaching methods across all subjects, minority students will independently build, tinker, play, hack, probe, be resourceful, and reverse engineer to discover how things work, which are important in the development of essential skills, such as critical thinking, problem solving, communication, and social interaction.

Underrepresentation of minorities in STEM is not just a Shelby County School District problem, it is a global problem. "The National Center for Science and Engineering Statistics (NCSES) released a federal report in 2017, Women, Minorities, and Persons with Disabilities in Science and Engineering, [which] explored the participation of these groups in science and engineering fields."³ Interesting enough the numbers of those working in science and engineering in 2015 (i.e.

¹ <https://www.schooldigger.com/go/TN/districtrank.aspx>

² <https://education.cu-portland.edu/blog/leaders-link/steam-programs-minorities-stem/>

³ <https://education.cu-portland.edu/blog/leaders-link/steam-programs-minorities-stem/>

Whites 67%, Asian 11%, Blacks 5%, and Hispanic 6%) closely aligns with data supporting lack of exposure to STEM education and barriers of entry for minorities.

GLA-STEM believes operating a fully STEM focused school within Shelby County can positively impact career paths of minorities, especially those who have been identified as at-risk, low income, behaviorally challenged, English Language Learners, disabled, special education, etc., who otherwise would not have access to STEM. Although, we recognize students have varying learning styles, come from diverse backgrounds, have different challenges and abilities, GLA-STEM desires to deconstruct and eventually eliminate labels and stigmas for students. Within its equitable learning environment, GLA-STEM chooses to highlight student strengths as opposed to weaknesses and thereby minimizing long-term effects of labels that place students in categories. Statistical research collected from over 300 million students and analyzed by Visible Learning trainer, John Hattie, “shows that providing a label to a student in many cases creates a glass ceiling, which means that the student works to their label, and not always above it.”⁴

GLA-STEM’s inclusive academic culture seeks to mainstream all students regardless of ability, and provide necessary internal licensed support teams along with in-class teaching assistants for students, who require more focused attention and guidance. The benefits of mainstreaming and deconstructing labels can alter a child’s belief about their abilities, eliminate inferior thoughts associated with being minority, special needs, ELL, disabled, etc., enhance educational participation, and potentially have positive impact on the student’s home life, and community.

“STEM learning doesn’t have to be pricey. ... STEM is really about skills and ideas — not just fancy labs and tech. Makerspaces can get going with things like LEGOs.” Lego, the most successful toy manufacturer in the world (valued at approximately 6.7 billion U.S. dollars.)⁵, only makes one toy – *a building block*. Research shows there are numerous benefits to building blocks “such as math, spatial activities, and early engineering skills ... more surprising, social skills.”⁶ Moreover, Lego blocks have proven to be beneficial therapy for children with special needs since the design is simple, repeatable, and predictable. Integrating toys and tools children are familiar with will be advantageous in engaging students within the classroom environment regardless of the subject matter or student ability.

⁴ http://blogs.edweek.org/edweek/finding_common_ground/2018/05/are_labels_preventing_students_from_succeeding.html

⁵ <https://www.statista.com/statistics/399131/value-of-the-leading-global-toy-brands/>

⁶ <https://www.bricks4kidz.com/blog/4-ways-building-toys-can-grow-your-childs-mind/>

GLA-STEM's curriculum offers exposing underrepresented minorities to the vast uses of technology beyond the acceptable association that 'technology *translates* to using a computer.' Technology is innovation, thought, design, ideas, and creation. It is woven through all academic subjects, connecting invaluable resources for science, math, engineering, arts, etc. The use of technology within GLA-STEM facilitates delivery methods for its entire academic offering. Advances in technology are occurring at a much faster rate than children are being educated and prepared for careers in various fields that require a STEM background.

GLA-STEM desires to be the next partner in Tennessee education to bridge gaps, bring more equity to STEM education, build communities of thinkers and future leaders. GLA-STEM believes leveraging and harnessing a student's innate knowledge, experience, and abilities will create better academic performance outcomes, render positive community contribution, and boost the local school district's ranking by closing the achievement gap for minority students. It will educate its students to be thriving community leaders, role models for their peers, successful in their career choices, productive adult citizens in society, and strengthen minority representation in STEM fields. Given the enormous minority student population in Shelby County, GLA-STEM considers the decision to deny its application adverse to the needs of the students, community, and school district.